



PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improved Electric Oven

We, GENERAL MOTORS CORPORATION, a Company incorporated under the laws of the State of Delaware in the United States of America, of Grand Boulevard in the City of Detroit, State of Michigan, in the United States of America (Assignees of MILLARD EUGENE FRY) do hereby declare the invention for which we pray that a patent may be granted and the method by which it is to be performed, to be particularly described in and by the following statement:-

This invention relates to electric ovens and particularly such ovens as have an electric heater element, a reflector and a broiler pan.

The invention helps to prevent grease and the like spattering out of the broiler pan against the walls of the oven and the loss of heat by radiation.

An oven according to the invention has an electric heater element located adjacent the top thereof, an inverted generally dish shaped reflector partially enclosing the heater element, and a high sided open top broiler pan having a width about that of the reflector and carried by a support; the support is so located that the edge of the broiler pan is above the lower edge of the reflector and the size of the broiler pan is such that its top edge is closely adjacent the reflector.

The scope of the present invention is defined by the appended claims; and how it can be carried into effect is hereinafter particularly described with reference to the accompanying drawings, wherein:-

Figure 1 is a perspective view of an electric cooker range having an oven according to this invention;

Figure 2 is a perspective view of a

broiler pan assembly forming part of the oven;

Figure 3 is a front view, partly in section, showing the location of the broiler pan assembly of Figure 2 in the oven of Figure 1;

Figure 4 is a front view of a handle on the broiler pan;

Figure 5 is a vertical section on the line 5--5 of Figure 4;

Figure 6 is an end view, with parts broken away, of a modified broiler pan;

Figure 7 is a vertical section on the line VII-VII of Figure 6; and

Figure 8 is a fragmentary plan of part of the broiler pan shown in Figures 6 and 7.

An electric cooker range 10 has two ovens 12 and 14. The oven 12 is of greater height than the oven 14 and is formed with a plurality of pairs of side shelf supports 16 which can support a shelf 18 formed of wire rods. A door 20 is pivoted to the range 10 and is adapted to close the front access opening of oven 12. The oven 14 is closed by a door 22 which is also pivoted to the range. The door 22 also closes a compartment 23 above the oven 14 which is adapted to contain a broiler pan assembly when not in use.

The broiler pan assembly (Figures 2 and 3) comprises an outer open top pan 24 and an inner high sided broiler pan 26 nested within the pan 24; the sides of the outer pan extend upwards to a height less than that of the sides of the broiler pan 26. Both pans are made of aluminium and the pan 26 is approximately 5 to 6 inches in height. The high sided pan 26 has a plurality of longitudinal ribs 28 in its base 27 to form a rack or grid to support food to be cooked. The grooves between the ribs 28 serve to collect renderings

during the broiling operation. The pan 26 is also formed with a depressed portion 30 adjacent each corner thereof. The portions 30 space the base 27 of the pan 26 away from the base 25 of pan 24 when the pan 26 is nested within the pan 24. The space 32 between the bases of the pans 24 and 26 is filled with water prior to a broiling operation during which the water cools the side walls 26a and 26b of the inner pan 26.

The operative position for the broiler pan assembly is shown in Figure 3. The lower pan 24 rests on the shelf 18 which is supported by a pair of shelf supports 16. The oven 12 has an electric heater element 34 located within a reflector 36. The reflector is dish-shaped and has side walls 38 which extend substantially from the front to the back of the oven. The top edge 40 of the inner pan 26 is flanged and extends above the lower edges of the walls 38. With this arrangement the food load to be cooked, which is placed on the ribs 28, is located substantially below the top edge 40 of the inner pan 26. As the top edge 40 of the inner pan 26 extends above the lower edges of the reflector walls 38 and the width of the pan is about that of the reflector, there is a barrier to prevent or reduce the escape of grease and the like which otherwise would spatter against the side walls of the oven 12. Moreover, as the side walls 26a and 26b of the inner pan 26 are cooled by water in the space 32, the spatter against these walls will not ordinarily burn thereon, so that the inner pan 26 can readily be cleaned after the broiling operation has been completed.

The inner pan 26 has brackets 42 at opposite ends thereof. Each bracket 42 is formed with vertical slots 44 which receive end portions 46 of a wire rod. The end portions 46 are interconnected by a cross piece 52 which has a downwardly extending portion 54. The cross piece 52 is welded to a handle 48 which is formed with notches 50 and 50c. The handle 48 is thus pivoted to the bracket 42 and the end portions 46 of the rod can move upwardly and downwardly in the slots 44. The notch 50 is wider than the notches 50c and can support a spool shaped bearing 51a for a rotisserie spit 51. The rotisserie spit 51 is supported in bearings 51a by identical handles 48 at opposite ends of inner pan 26. The remainder of the spit 51 is hexagonal in cross section. If it is desired to

prevent rotation of the spit 51, the hexagonal portion of the spit can be placed in a notch 50c as indicated in dotted lines in Figure 4. In this position the flat sides 51b of hexagonal spit 51 rest against the sides of a notch 50c to prevent rotation of the spit. The rear wall of oven 12 may have a rotisserie spit driving mechanism (not shown) for rotating the spit 51. The handles 48 are held in a vertical rotisserie spit supporting position by the engagement of rod portions 54 within the flanged edge 40 of the inner pan (Figures 4 and 5). To set the handles in the vertical position, it is only necessary to pull the handles up slightly and then slide the rod portion 54 down into the flanged portion 40. When the pan 26 is used for supporting a rotisserie spit, the pan rests directly on the shelf 18 with the depressions 30 lying between the wire rods of the shelf. The shelf 18 is moved to a position on a lower pair of shelf supports 16 to leave sufficient space between the pan 26 and the heater element 34.

The outer pan 24 of the broiler pan assembly has a rolled edge 56 which, with the pan 24 inverted, fits into the flanged edge 40 of the high sided pan 26. The broiler pan assembly can then be used as a roaster, with the pan 24 acting as a cover.

A modified broiler pan assembly is illustrated in Figures 6, 7 and 8. This assembly includes a high sided broiler pan 58, which is approximately five to six inches in height. The bottom wall of the pan 58 is shaped to form a central sump or depression 60 bounded by a peripheral trough 62. An inner pan 64 covers the bottom wall of the pan 58 and has a peripheral edge abutting a ledge 66 formed in the side walls of the pan 58. The pan 64 has an imperforate wall portion 68 which entirely covers the trough 62 and has a central portion 70 formed with passages 72. The central portion 70 and passages 72 overlie the sump or depression 60. The side walls of the pan 58 have holes 74 which connect the trough 62 with the exterior of the pan. The trough 62 is partly filled with cooling water which cools the side walls of the pan 58 during broiling. The holes provide a means for releasing any steam trapped between the wall 68 of the pan 64 and the side walls of the pan 58.

The food load to be cooked is placed on the central portion 70 of pan 64, and grease and the like

evolved during broiling pass through the passages 72 into the sump or depression 80. The broiling pan assembly is disposed in a position similar to that of the broiling pans 24 and 28 in Figure 3 during the broiling operation, with the top rolled edge 84 of the broiling pan 58 extending above the lower edge of the reflector 38 and the width of the pan being about that of the reflector.

The broiler pan 58 also has a rotisserie spit support. Pivot brackets 76 are secured to opposite ends of the pan 58. The brackets 76 pivotally support handles 78 each of which is formed with a spit supporting notch 80. The handles 78 have lug members 82 to engage over the top rolled edge 84 of the pan 58 when the handles 78 are turned to a vertical rotisserie spit supporting position.

Radiant heat from the heater element 34 is reflected onto the food load by the high sides of the pans, thus increasing the broiling efficiency.

Further, the high sides prevent heat radiation from the electric heater element affecting the oven thermostat which might otherwise prematurely trip open.

What we claim is:-

1. An oven having an electric heater element located adjacent the top thereof, an inverted generally dish shaped reflector partially enclosing the heater element, and a high sided open top broiler pan having a width about that of the reflector and carried by a support, the support being so located that the top edge of the broiler pan is above the lower edge of the reflector and the size of the broiler pan being such that its top edge is closely adjacent the reflector.

2. An oven according to claim 1, wherein the broiler pan has a rack means to support a load to be broiled.

3. An oven according to claim 2, wherein the rack comprises a series of ribs in the base of the broiler pan.

4. An oven according to claim 2, wherein the rack comprises a perforated plate spaced from the base of the broiler pan.

5. An oven according to any one of the preceding claims, having means for water cooling the broiler pan.

6. An oven according to claim 5, wherein the broiler pan is nested in

an outer pan adapted to hold cooling water and has its base spaced from the base of the outer pan.

7. An oven according to claim 6, wherein the sides of the outer pan extend upwards to a height less than that of the sides of the broiler pan.

8. An oven according to claim 6 or 7, wherein the broiler pan has bottom depressions to rest on the base of the outer pan and space the bases of the pans.

9. An oven according to claim 5, wherein the base of the broiler pan is formed with a peripheral trough, which is adapted to contain cooling water, whose open top is closed by a plate and whose side walls are apertured.

10. An oven according to claim 9, wherein the base of the broiler pan has a central depression bounded by the peripheral trough.

11. An oven according to any one of the preceding claims wherein the broiler pan has handles at opposite ends thereof, each handle being pivoted to the pan, having a rotisserie spit supporting notch and including means to hold the handle in a vertical position.

12. An oven according to claim 11, wherein the means to hold the handle in a vertical position comprises a lug member which engages over a top edge of the broiler pan when the handle is moved to a substantially vertical position.

13. An oven having an electric heater element, a reflector and a broiler pan, substantially as described and as shown in Figures 1 to 5 of the accompanying drawings.

14. An oven having an electric heater element, a reflector and a broiler pan, substantially as described and as shown in Figures 1 and 3 and as modified in Figures 6 to 8 of the accompanying drawings.

E. WILLIAMSON

Chartered Patent Agent.

Fig. 2.

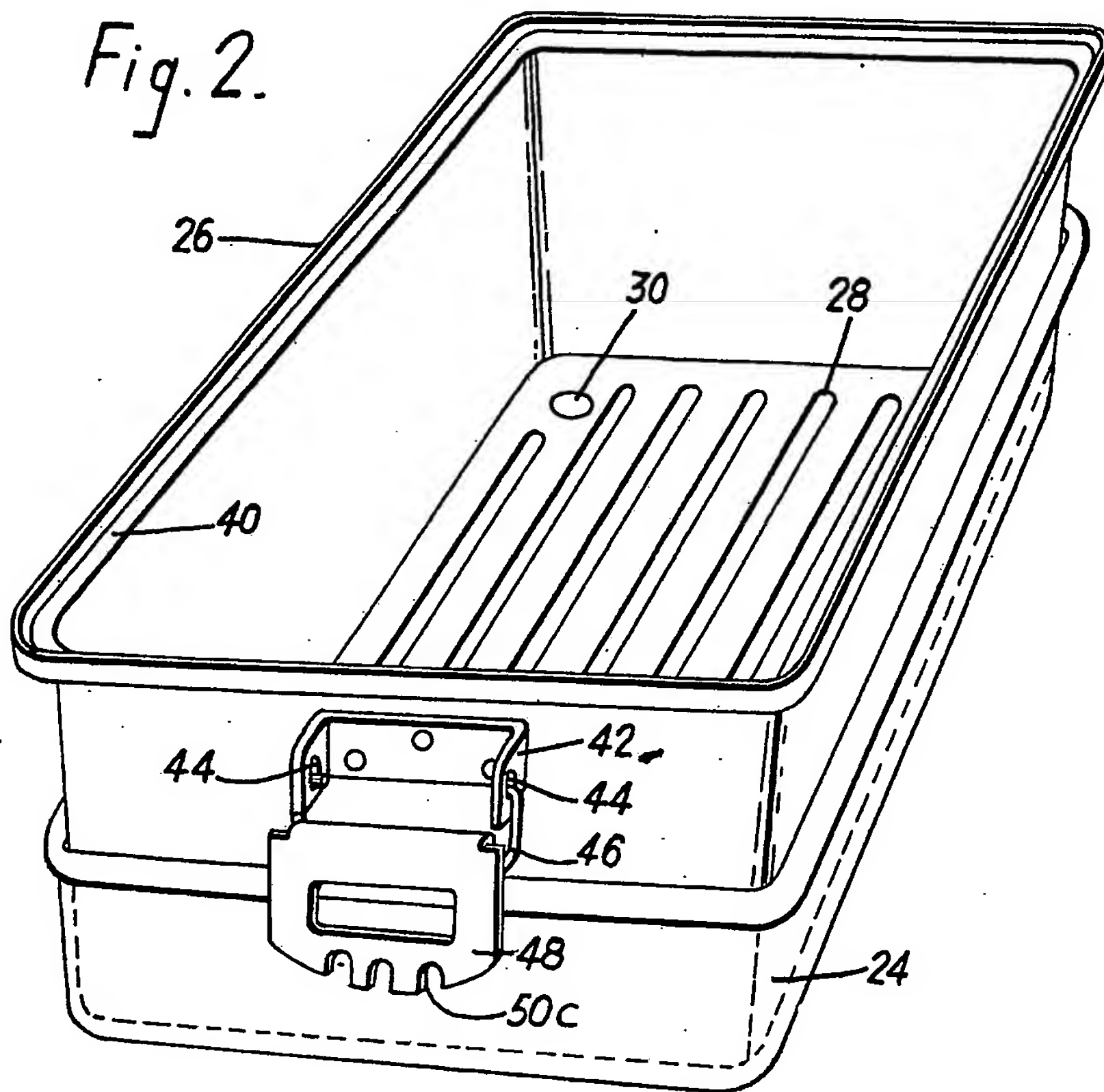


Fig. 1.

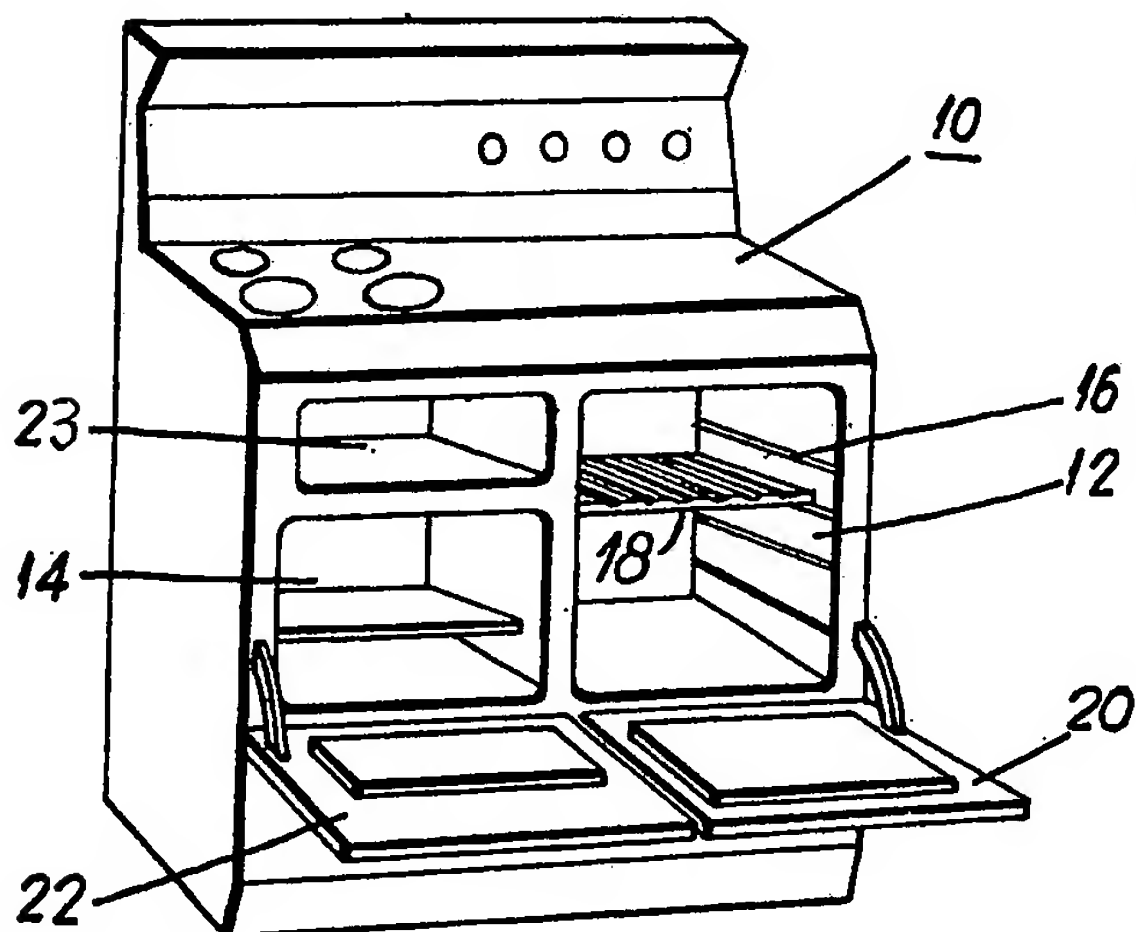


Fig. 3.

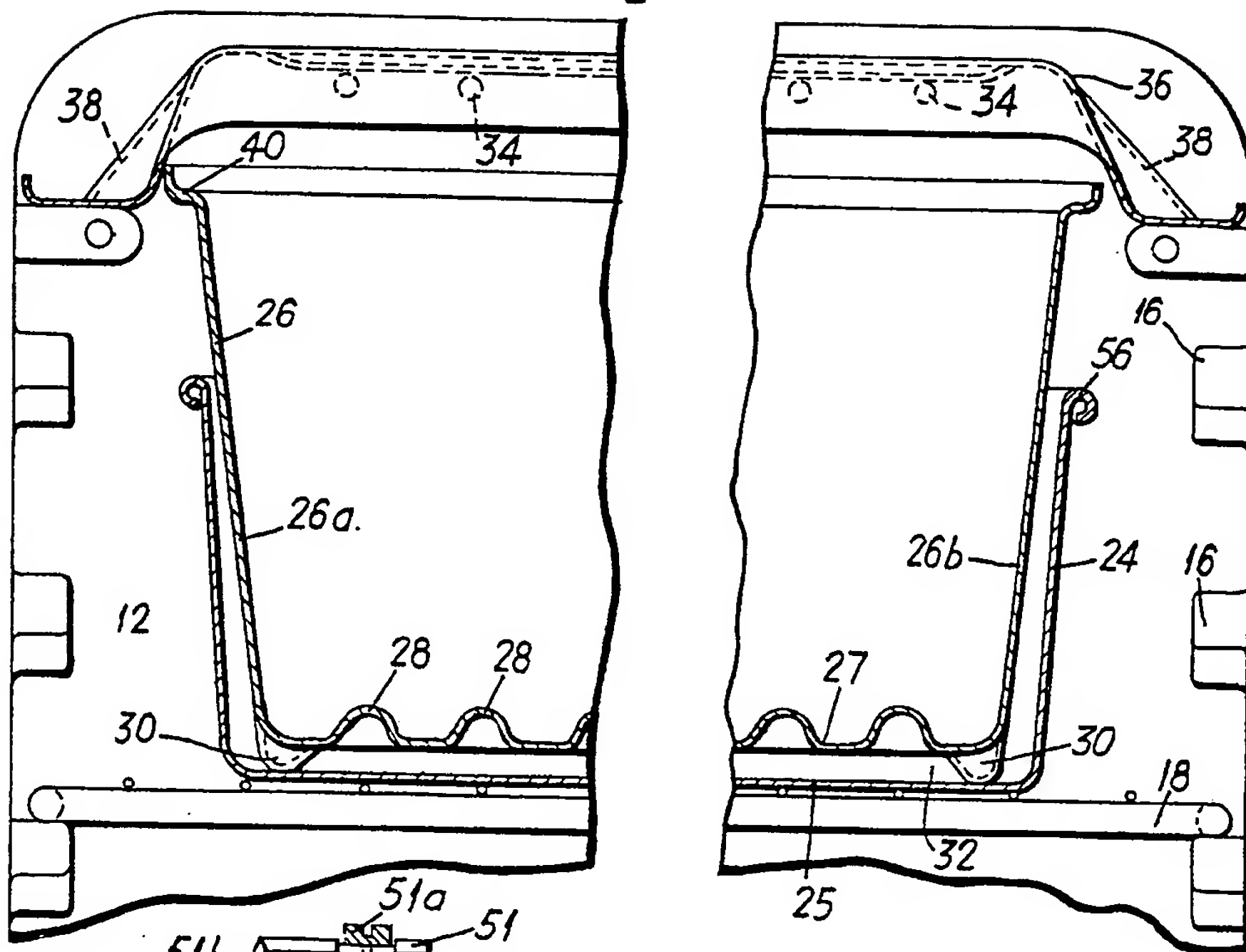


Fig. 5

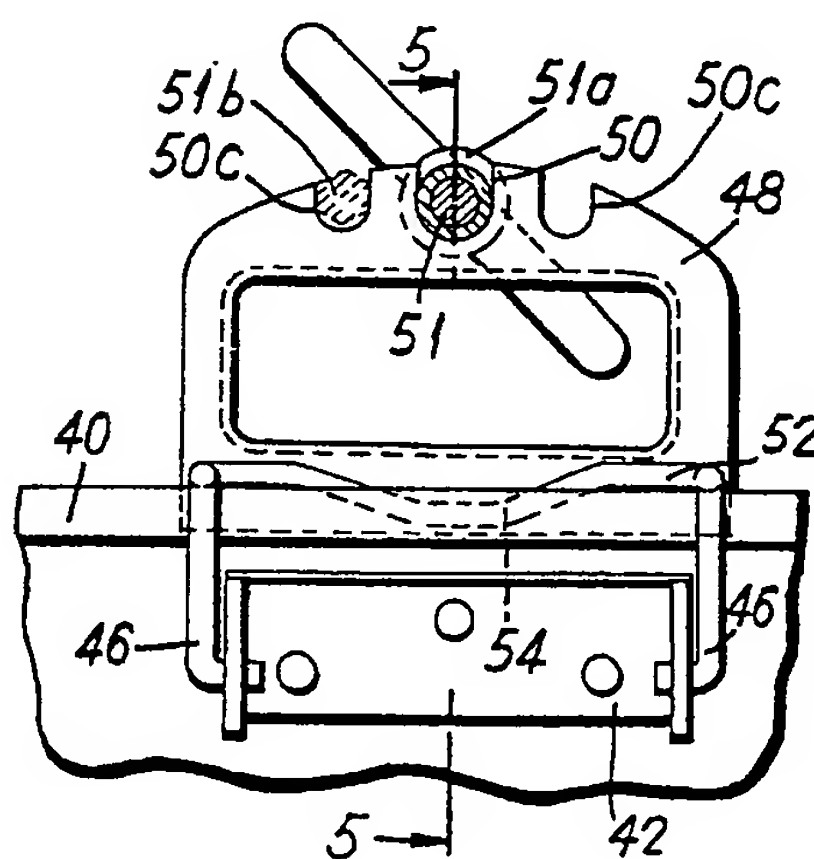
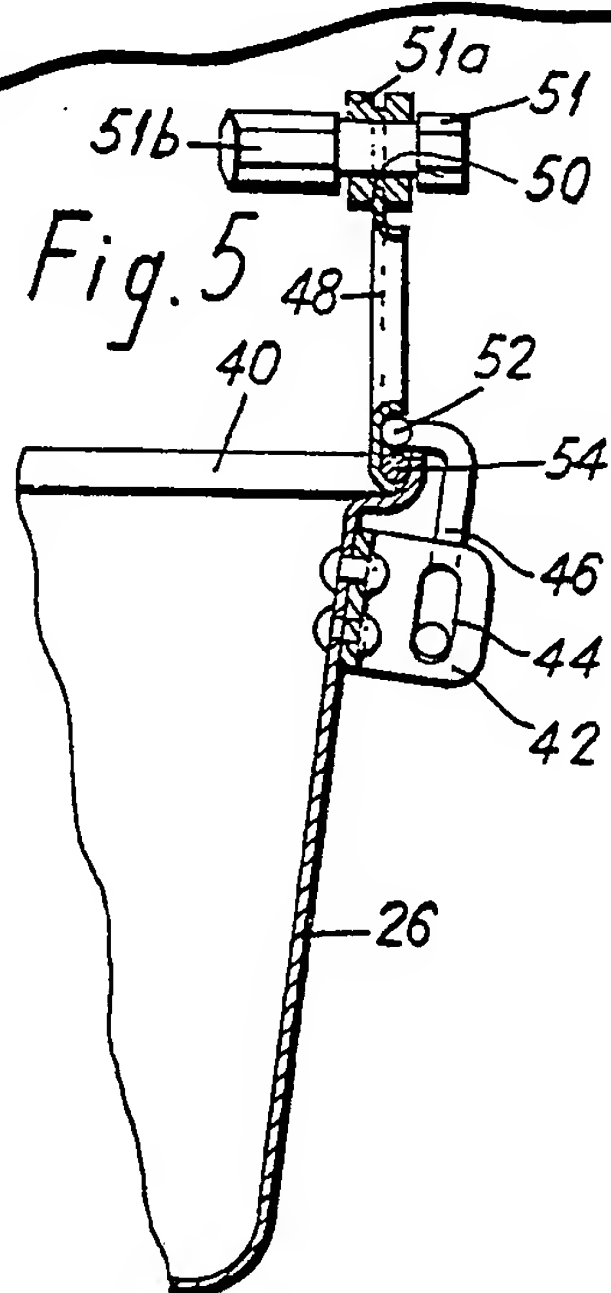


Fig. 4.

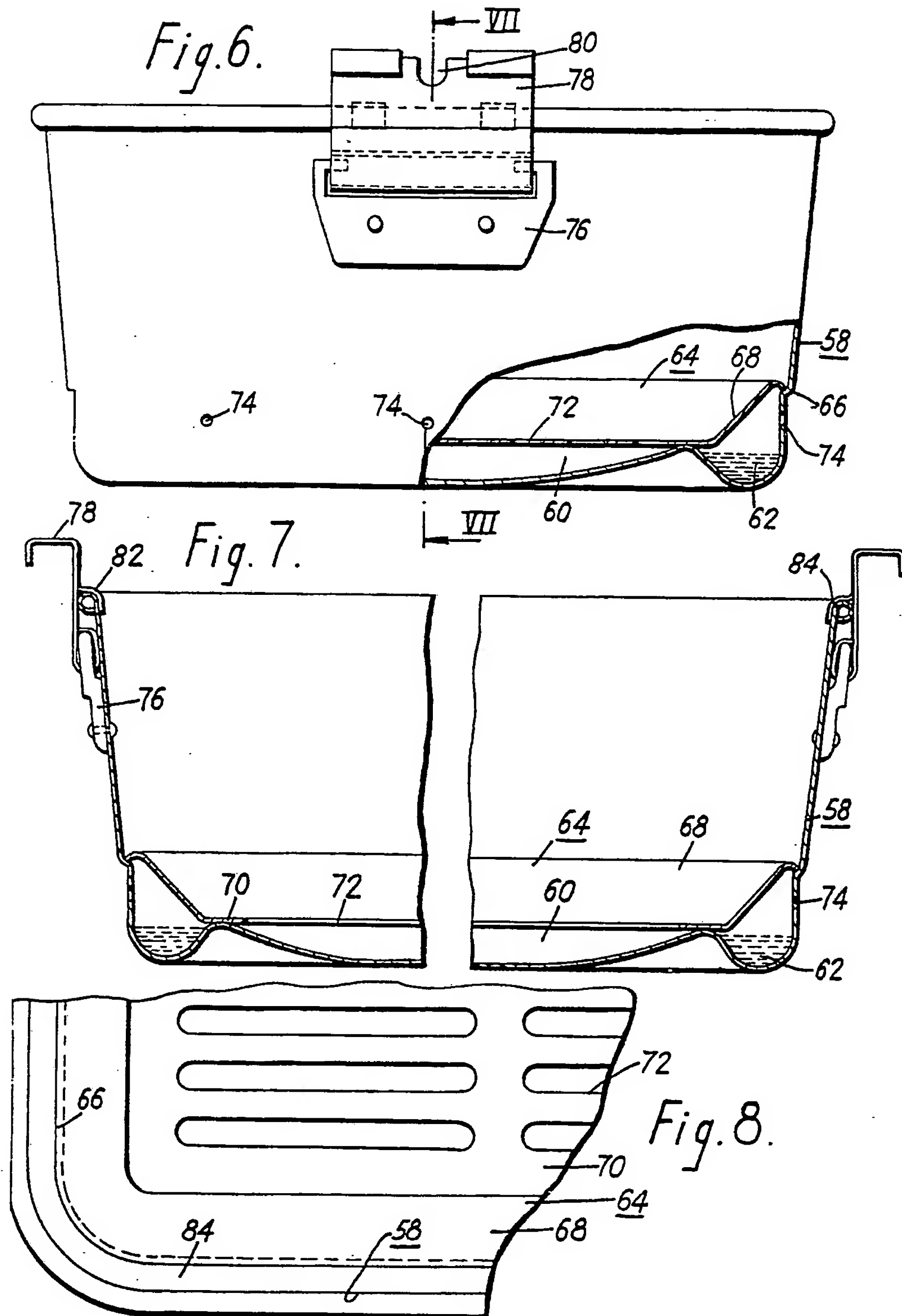


Fig. 3.

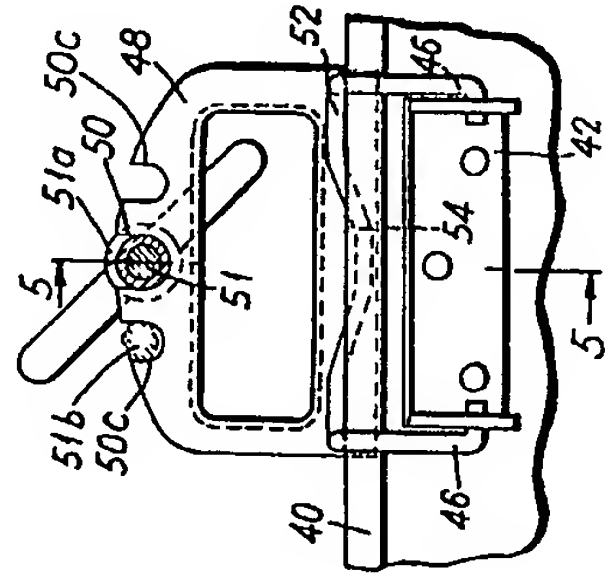
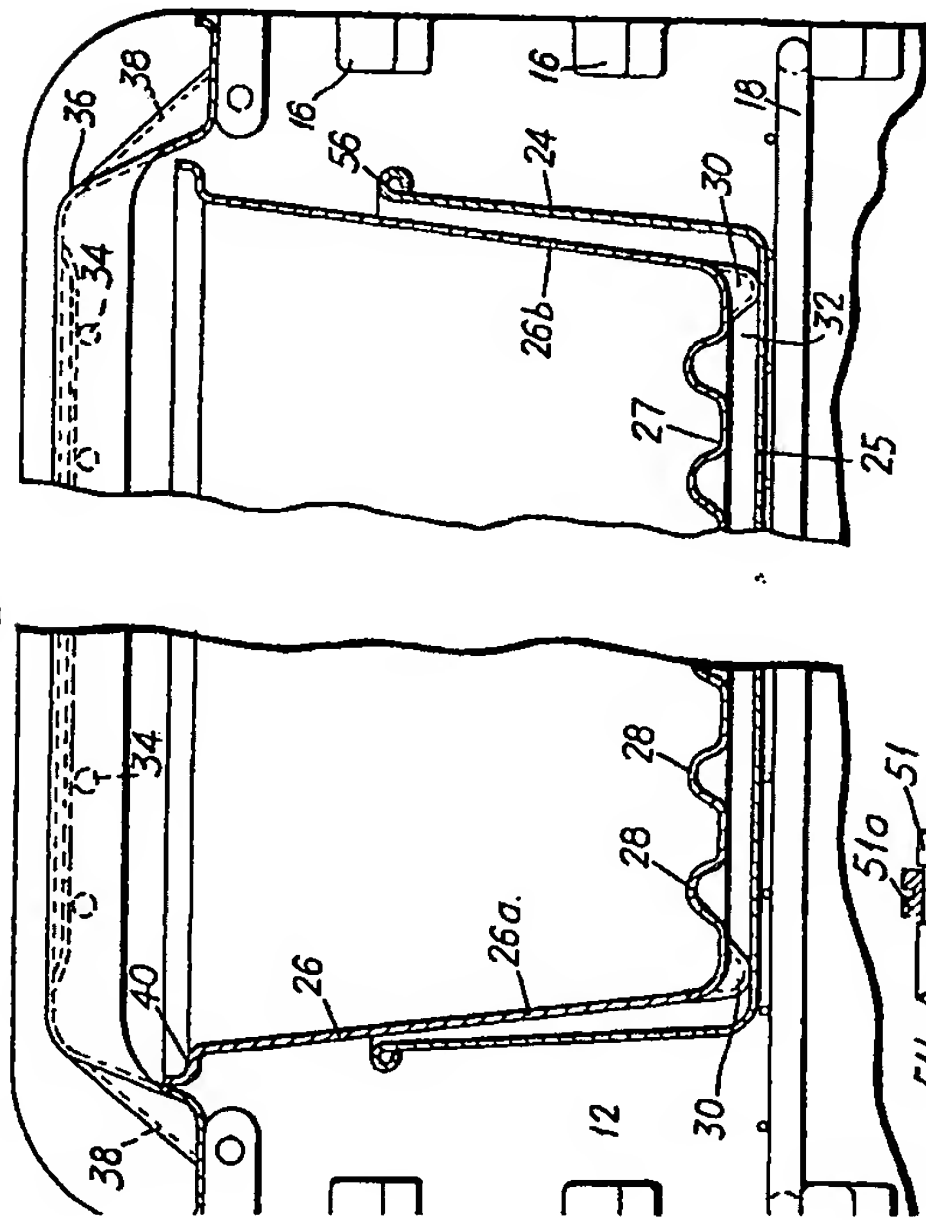


Fig. 4.

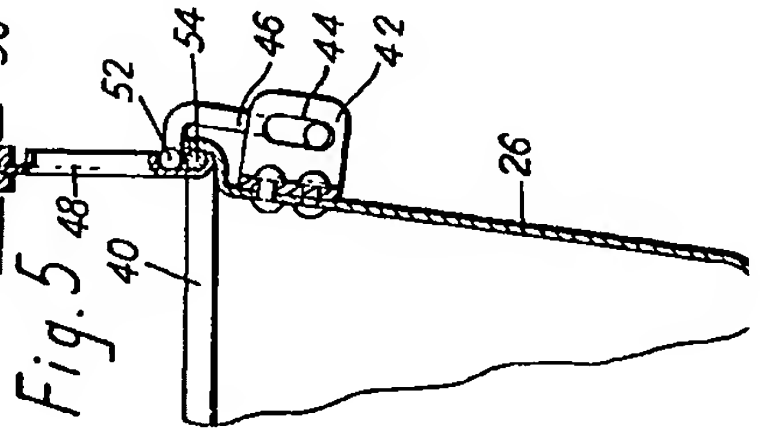


Fig. 5

Fig. 6.

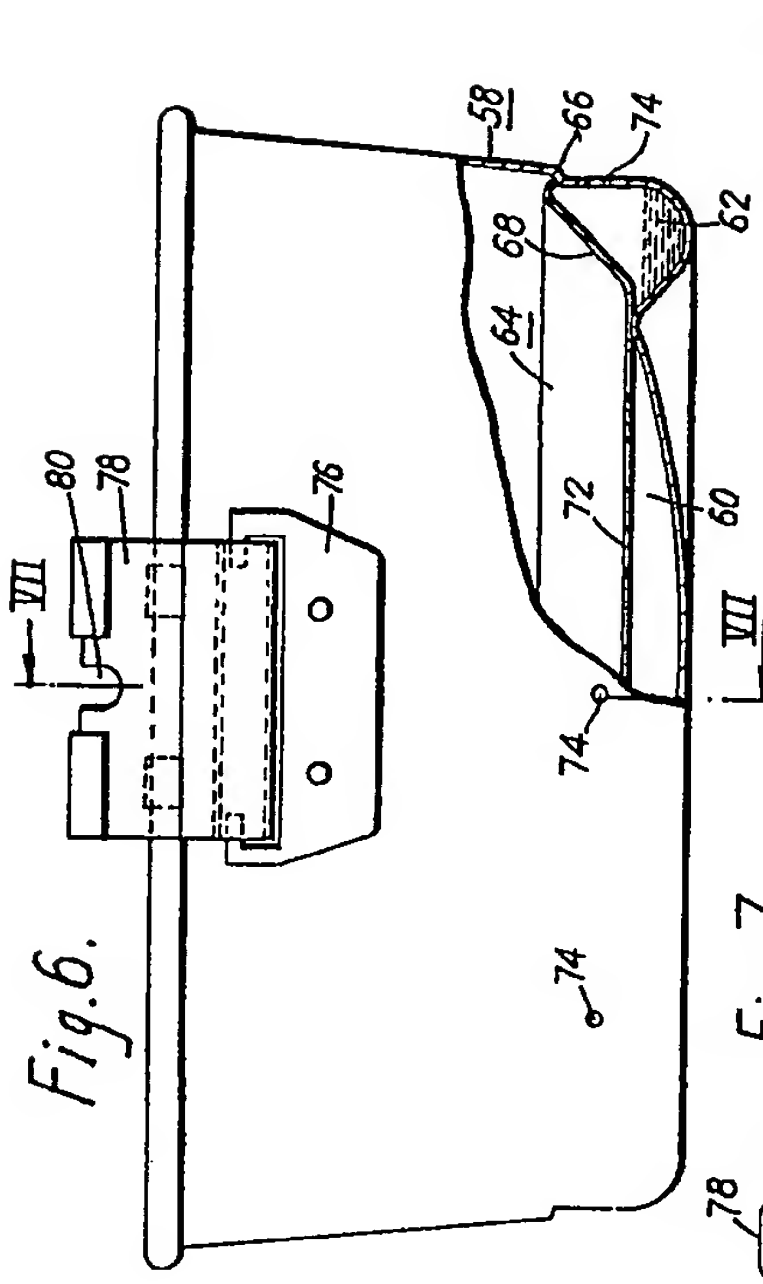


Fig. 7.

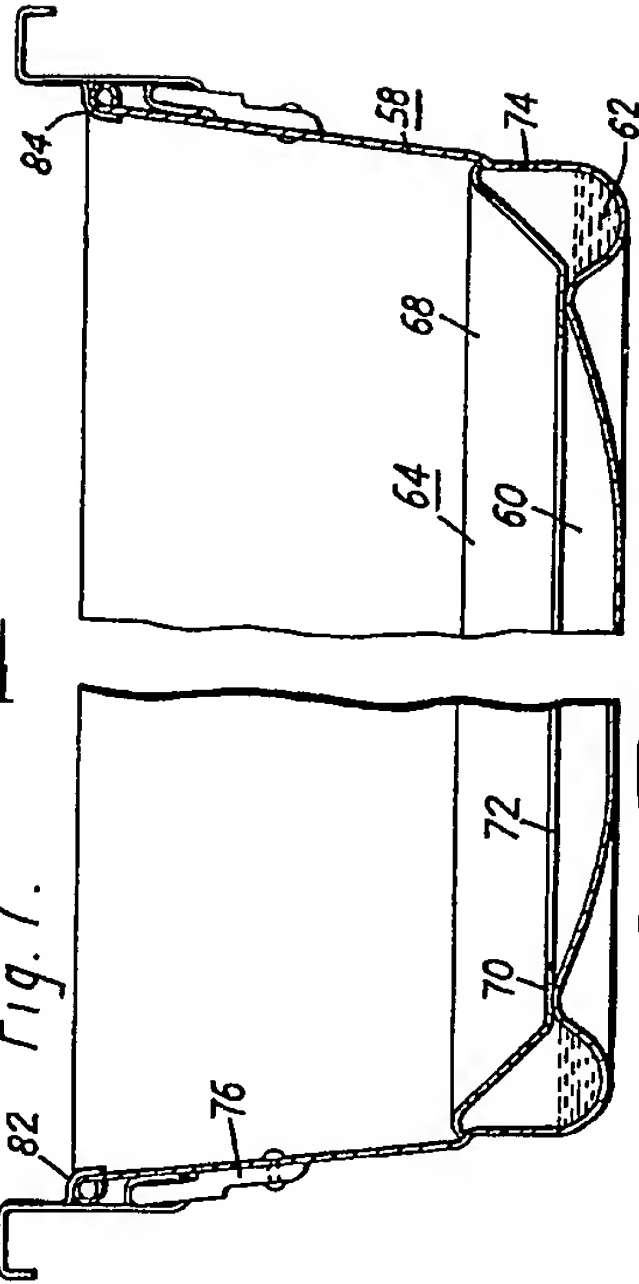


Fig. 8.

